PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	**Spratt, Michael P.**	Examiner:	Nguyen, Quynh, H.
Serial No.:	**09/905,775**	Art Unit:	2642
Filed:	July 13, 2001	Our Ref:	B-4242 618937-3
For:	"MESSAGE PASSING TO A KNOWN LOCATION"	Date:	February 15, 2006
		Re:	***Appeal to the Board of Appeals***

BRIEF ON APPEAL

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an appeal from the Final rejection, dated November 16, 2005, for the above identified patent application. The Commissioner is hereby authorized to charge the amount of $500.00 for the fee set forth in 37 C.F.R. 1.17(c) for submitting this Brief, and any additional fees which may be required or credit overpayment to deposit account no. 08-2025. **In particular, if this Brief is not timely filed, the Commissioner is authorized to treat this Brief as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this Brief timely filed and the petition fee due in connection therewith may be charged to deposit account no. 08-2025.** The Appellant submits that this Appeal Brief is being timely filed, since the notice of Appeal is filed concurrently.

REAL PARTY IN INTEREST

The real party in interest to the present application is Hewlett-Packard Development Company, LP, a limited partnership established under the laws of the State of Texas and having a principal place of business at 20555 S.H. 249

Houston, TX 77070, U.S.A. (hereinafter "HPDC"). HPDC is a Texas limited partnership and is a wholly-owned affiliate of Hewlett-Packard Company, a Delaware Corporation, headquartered in Palo Alto, CA. The general or managing partner of HPDC is HPQ Holdings, LLC.

RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences related to the present application.

STATUS OF CLAIMS

Claims 1-5, 7, 9-18, 20 and 21 are the subject of this appeal and are reproduced in the accompanying appendix.

STATUS OF AMENDMENTS

The Amendments filed by the Appellant on September 2, 2005 have been entered by the Examiner.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention described and claimed in the present application relates generally to passing a message, via mobile entities equipped with short range communication devices, to a target receiver at a known location (page 1, lines 5-6). Known solutions involve transmitting local information to passers-by equipped with mobile devices having short-range transceivers, which provides for diffusing information rapidly among the population of mobile-device users in a general vicinity of a source, but which is not the most efficient way for one mobile entity to pass a message to a particular target entity (page 2, lines 27-29). For passing a message to a target receiver at a known location, the invention provides for including in the message an indication of the location of the target receiver, determining if a passing-by mobile entity has a direction of travel that is appropriate to progress the message on its way to the target receiver and, if so,

using the mobile entity to carry the message (page 3, lines 6-12).

Independent claim 1 recites: "*A method of passing a message* (for example K's message in figure 3) *to a target receiver at a known location* (for example T in figure 3), *wherein the message is physically carried towards the target receiver by one or more mobile entities* (for example L, Q in figure 3) *that receive and pass on the message by short-range communication* (see for example page 6, lines 17-19), *the message including an indication of the location of the target receiver* (see for example page 5, lines 20-22), *and at least one of the mobile entities is used to carry the message only following an immediately-prior determination* (for example when K is being passed by a mobile device, see page 7, line 29 to page 8, line 1) *that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver* (see for example page 5, lines 13-15)".

Independent claim 17 recites: "*A method of passing a message* (for example K's message in figure 3) *to a target receiver at a known location* (for example T in figure 3), *wherein the message is physically carried towards the target receiver by one or more mobile entities* (for example L, Q in figure 3) *that receive and pass on the message by short-range communication* (see for example page 6, lines 17-19), *the message including an indication of the location of the target receiver* (see for example page 5, lines 20-22), *and at least one of the mobile entities knowing at least its approximate location and direction of travel and being used to carry the message only upon the entity being determined to be currently travelling in a direction appropriate to physically carry the message in a direction that progresses the message towards the target* (see for example page 6, lines 1-5)".

Independent claim 18 recites an "*Apparatus for passing a message to a mobile entity travelling in a direction appropriate to progress the message on its way to a target receiver the location of which is indicated in the message,* (see for example page 5, lines 13-15) *the apparatus comprising:*

-a short-range transceiver capable of determining the presence nearby of said mobile entity and of exchanging data with it (see for example page 4, lines 7-13);

-a location discovery arrangement by which the apparatus can know its location (see for example page 4, lines 21-24);

-a memory for holding the message (see for example page 4, lines 14-16); *and*

-a send control subsystem for enabling the passing of the message, via the short-range transceiver, to said mobile entity only upon determining that the current direction of travel of the mobile entity, as indicated by direction data received from the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver (see for example page 8, lines 9-19)".

Independent claim 20 recites "*A mobile entity for receiving a message, and storing it for carriage, when travelling in a direction appropriate to progress the message on its way to a target receiver the location of which is indicated in the message* (see for example page 5, lines 30-32), *the apparatus comprising:*

-a short-range transceiver capable of determining the presence nearby of apparatus holding the message, and of exchanging data with the apparatus (see for example page 4, lines 7-13);

-a direction-of-travel discovery arrangement by which the mobile entity can determine at least its general direction of travel (see for example page 6, lines 1-5);

-a memory for storing the message (see for example page 4, lines 14-16); *and*

-a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the direction of travel of the mobile entity, is appropriate to progress the message on its way to the target receiver as indicated by direction data received from the apparatus via the short-range subsystem (see for example figure 3 and page 8, lines 24-28)".

Independent claim 21 recites "*A mobile entity for receiving a message, and storing it for carriage* (see for example page 5, lines 30-32), *when travelling in a direction appropriate to progress the message on its way to a target receiver the location of which is indicated in the message* (see for example page 5, lines 13-20), *the apparatus comprising:*

-a short-range transceiver capable of determining the presence nearby of apparatus holding the message, and of exchanging data with the apparatus (see for

example page 4, lines 7-13);

-a location and direction-of-travel discovery arrangement by which the mobile entity can determine at least its general location and direction of travel (see for example page 4, lines 21-24);

-a memory for storing the message (see for example page 4, lines 14-16); *and*

-a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the current direction of travel of the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver as indicated by a reference direction determined by the mobile entities current location and a location passed to it from the apparatus via the short-range subsystem (see for example figure 3 and page 8, lines 24-28)".

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Issue 1: Whether claims 1-5, 7 and 9-17 are patentable under 35 U.S.C. 103(a) over U.S. Pat. No. 5,987,011 to Toh (hereafter Toh) in view of U.S. Pat. No. 6,104,712 to Robert (hereafter "Robert").

Issue 2: Whether claims 18 and 20-21 are patentable under 35 U.S.C. 103(a) over Toh in view of Robert and further in view of U.S. Pat. No. 6,704,283 to Stiller.

ARGUMENT

Issue I: Whether claims 1-5, 7 and 9-17 are patentable under 35 U.S.C. 103(a) over U.S. Pat. No. 5,987,011 to Toh in view of U.S. Pat. No. 6,104,712 to Robert.

Rejection of claim 1

Office Action issued on October 19, 2004

In section 2 of the Office Action of October 19, 2004, the Examiner rejected claim 1 as being unpatentable over Toh in view of Robert. The Examiner acknowledged that "Toh does not specifically suggest the mobile entities are used to carry the message following a determination that its direction of travel is appropriate to progress the message on its way to the target receiver". However, the Examiner opined that Robert teaches a communication network that has "a plurality of terminal devices that are carried along with individuals", wherein "each wireless node has an IP address, URL or telephone number" and wherein "a GPS keeps track of the instantaneous position, and a local processor accesses this database to determine node-to-node path to a destination", and opined that "it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the feature mentioned above, as taught by Robert, in Toh's system in order to maximize utilize the benefit of short range communication".

In response, the Appellant clarified the language of claim 1 to recite that *"the message is physically carried towards the target receiver"*, and that *"at least one of the mobile entities is used to carry the message only following an immediately-prior determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*.

The Appellant argued that the Examiner has failed to show that Robert discloses determining if the direction of travel of the mobile entities is appropriate to progress a message on its way to a target receiver, thereby failing to show that a combination of Toh and Robert could lead to such a feature.

Further, the Appellant noted that claim 1 was amended to recite that an entity is used to carry the message *"only following an immediately-prior determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*. The Appellant noted that Robert only discloses transmitting messages using an end-to-end route determined in advance (col.19 lines 45-50), and fails to disclose or suggest

using, as recited in amended claim 1, an "*immediately-prior determination*" that the direction of travel of a mobile entity is appropriate to progress a message or not.

The Appellant also noted that Robert teaches that a message is forwarded automatically by a node or entity if said node is not the destination of the message (column 2, lines 63-67), thus actually teaching away from forwarding a message to a node only if an immediately-prior determination indicates that the direction of travel of the node is appropriate to progress the message, as recited in claim 1.

The Appellant finally noted that Toh cannot be deemed to disclose or suggest that "at least one of the mobile entities is used to carry the message only following an immediately-prior determination that its direction of travel is appropriate to physically carry the message"as recited in claim 1, because Toh, as acknowledged by the Examiner, does not suggest using even a determination that the direction of travel of a mobile entity is appropriate, and submitted that in view of the above, claim 1 is patentable over Toh in view of Robert.

Office Action issued on June 2, 2005

In section 2 of the Office Action of June 2, 2005, the Examiner withdrew the previous office action, but rejected again claim 1 over Toh in view of Robert. The Examiner opined that Toh teaches that each mobile node comprises a routing table to support a plurality of routes through the network between source and destination mobile host and routing protocol to support the immediately-prior movement of a node. The Examiner also opined that Robert teaches "predicting direction of travel for sending/routing protocol mobile with package (col. 20, lines 21-67)", and that it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the feature mentioned above, as taught by Robert, in Toh's system in order to maximize utilize the benefit of short range communication.

In response to the Office Action of June 2, 2005, the Appellant noted that contrary to the Examiner's assertion, Toh does not teach that each mobile node comprises a routing table to support a plurality of routes through the network

between source and destination mobile host and routing protocol to support the immediately-prior movement of a node: Toh discloses a method of passing a message from a source node 20 to a target node 24 wherein the message is carried towards the target node by one or more mobile nodes 22 that receive and pass on the message along a route 30. The route 30 is selected by:

Initiating a broadcast query from the source node (column 8, lines 1-2 and 11-13);

In the target node 24, selecting the best route (column 10, lines 21-22); and

Sending a REPLY packet containing the selected route from the target node 24 to the source node 20 (column 11, lines 27-31).

When a node of the selected route changes, Toh provides for either re-initiating a broadcast query from the source node (Fig. 7a, Fig. 8a) or initiating a localized query from a node 56/64 of the selected road upstream of the node that has moved (Fig. 7b, Fig. 8b, Fig. 8c). In either case, the query ultimately reaches the target node 24, so that a new best route (or best partial route) can be selected by the target node 24, which sends a REPLY packet to the node that initiated the query (for example column 12. lines 21-24 with regard to Fig. 8b).

The Appellant noted that in Toh, the selection of the best route is always done in the target node 24. In other words, in Toh, determining that an intermediate node can be used to carry a message from a source to a target always involves:

-sending a query from or through the intermediate node;

-determining in the target node that the intermediate node is appropriate to carry the message (that it is in the best route); and

-sending back a REPLY message to or through the intermediate node.

Accordingly, the Appellant submitted that Toh cannot be deemed to disclose or suggest that an intermediate node can be used to carry a message, from the source to the target, following an immediately-prior determination that the node is appropriate to carry the message to the target receiver.

Furthermore, the Appellant noted that Robert discloses a method of passing packets or messages from a network source to a network destination,

wherein an *"end-to-end packet route from a network source to a network destination"* (column 19, lines 45-50) is first determined, then written in a packet route field 1305 of a message, prior to transmission of the message (column 20, lines 21-25). In other words, in Robert a node can only be used to carry a message after the end-to-end packet route has been determined and written in the message, and accordingly Robert cannot be deemed to disclose or suggest using an intermediate node to carry a message, from the source to the target, following an immediately-prior determination that the node is appropriate to carry the message to the target receiver.

In view of the above, the Appellant submitted that no combination of Toh and Robbert would have led one of ordinary skill in the art to a method as recited in claim 1, and in particular wherein: *"at least one of the mobile entities is used to carry the message only following an immediately-prior determination"* that the mobile entity is appropriate to carry the message to the target receiver. The Appellant submitted that at least in view of the above, claim 1 is patentable over Toh in view of Robert.

In addition, the Appellant noted that claim 1 recites that the mobile entity is appropriate to carry the message to the target receiver if *"its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*. The Appellant acknowledged with the Examiner that "Toh does not specifically suggest the mobile entities are used to carry the message following a determination that its direction of travel is appropriate to progress the message on its way to the target receiver".

Appellant noted that the Examiner opined that Robert teaches predicting direction of travel for sending/routing protocol mobile with package (column 20, lines 21-67). However, the Appellant noted that Robert teaches selecting the nodes of a packet route as a function of their coordinates, not of their direction of travel (column 20, lines 20-28: *"the packet route field 1305 [...] is calculated by processor 250 according to a preferred or best route to x, y, z coordinates of respective MANs between the source and destination"*). The Appellant submitted that Robert only teaches using trajectory vectors to calculate *"a list of Migratory Node*

Identifications (MNIDs) specifying the location the corresponding Migratory Access Node (MAN) will be at when the MANs come within range of each other" (column 25, line 58-62), whereby whatever direction a node follows, only the position of the node when it comes within range of the other nodes is of importance in Robert. Appellant noted that accordingly, Robert does not disclose or suggest determining if the direction of travel of a node is appropriate to physically carry a message in a direction that progresses the message on its way to the target receiver.

The Appellant submitted that accordingly, no combination of Toh and Robert would have led one of ordinary skill in the art to a method as recited in claim 1, and in particular wherein: *"at least one of the mobile entities is used to carry the message only following an immediately-prior determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*.

The Appellant submitted that also in view of the above, claim 1 is patentable over Toh in view of Robert. Should the Examiner disagree, Appellant respectfully requested him to clearly and specifically point out where Toh or Robert disclose the above features, in accordance with 37 C.F.R. 1.104(c)(2).

Office Action issued on November 16, 2005

In section 3 of the Office Action issued on November 16, 2005, the Examiner opines that Toh teaches a method for passing a message (col.12, lines 1-3) to a target receiver at a known location (Fig. 8a, destination node 24), wherein the message is carried towards the target receiver by one or more mobile entities (intermediate nodes 22) by short-range communication (ad-hoc mobile communications)(col. 4, lines 52-67), the message including an indication of the location of the target receiver, and at least one of the mobile entities is used to carry the message only following an immediately-prior determination that the node is appropriate to physically carry the message to the target receiver (col.12, lines 46-48 and lines 59-64; col. 13 lines 37-39; col. 14, lines 56-67).

Appellant respectfully disagrees.

Col. 12, lines 46-48 recites: *"The RN control packet 73 also comprises a DIR flag 78 which serves to indicate the direction of RN[1] propagation"*.

Appellant notes that a RN control packet is defined by Toh as a "Route Notification" packet, which is sent by a pivoting node 64 ("the destination node's immediate upstream neighbour 64", see col. 12, lines 16-17) if no partial route is found from the pivoting node after the destination node has moved (col. 12, lines 32-34). Appellant fails to understand which precisely of the Route Notification packet and the DIR flag in the Route Notification packet is deemed by the Examiner to read on any of the features recited in claim 1, and why.

Col. 12, lines 59-64 recites: *"When any intermediate node 22 moves, its pivoting node 64 removes its outgoing node entry and its immediate downstream neighbour 52 propagates a RN[1] control packet 73 towards the destination node 24, thereby deleting all the subsequent downstream nodes' invalid routing entries"*;

Appellant notes that the above excerpt recites that, when an intermediate node 22 of Toh moves, its immediate downstream neighbour deletes all the routing entries of the downstream nodes, towards the destination node. This describes in which conditions nodes cease to be used, but does not describe in which conditions they are chosen for use. In particular, Appellants notes that deleting the routing entries downstream of a node after a node has moved does in no way show that Toh:

-teaches determining that the node is appropriate to carry physically a message to a target receiver; or

-teaches using a node to carry a message only following an immediately-prior determination that it is appropriate to physically carry the message to the target receiver.

Again, for the many reasons previously discussed, Appellant submits that none of the features recited in the above excerpt of Toh reads on any of the features recited in claim 1.

Col. 13, lines 37-39 recites: "*A flow diagram showing the steps carried out in the RRC phase which is carried out when an active intermediate node 22 or the destination node 24 moves, is shown in FIG. 8d*".

Appellant notes that Fig. 8d relates to the reconstruction of a route after a selected route is invalidated by the movements of mobile hosts: the previous route entries are first invalidated (second box from start), and a partial route discovery is then performed (third box from start). If the partial route discovery is successful, the valid route is updated. If not, a more complete BQ route discovery must be performed before the valid route is updated.

However, the appellant note that the Examiner has failed to show that any of the partial (LQ) discovery or BQ route discovery of Toh involves either:

-determining that a node is appropriate to carry physically a message to a target receiver; or

-using a node to carry a message only following an immediately-prior determination that it is appropriate to carry the message to the target receiver.

In particular, the Appellant notes that Toh teaches that the selection of a route is done by the destination node, upon receipt by the destination node of multiple BQ or LQ packets, which then selects the best route and replies to the source node 20 (col.15, lines 20-22). Accordingly, the Appellant respectfully submits that, since in Toh the determination that a node is part of a selected route to transmit messages only follows:

BQ or LQ packets being sent to the destination node; and

the destination node sending a reply to the source node; Toh cannot be deemed to disclose or suggest using a node to carry a message "*only following an immediately-prior determination*" that it is appropriate to carry the message to the target receiver, as recited in claim 1.

Col. 14, lines 56-67 recites: "*When the destination node 24 migrates, RRC procedure is achieved via the LQ[H] process 70. However, when the destination node 24 is within the source node's radio coverage range, packet duplicates will result at the destination node 24 since the destination node 24 now receives packets from the source node 20 directly and also from the original source node 20 to destination node 24 route.*

Hence, to avoid packet duplicates and non-optimal routes, the source node 20, on discovering that the destination node is within range and is in stable state, will send a RN[1] control packet 73 downstream to erase the existing route and will re-establish a new single hop route with the destination node 24". Appellant notes that col. 14, lines 56-67 relate to the "*destination node migrating into source node's radio coverage range*", as recited col. 14, lines 54-55. Appellant notes that in the above case, "*the destination node 24 now receives packets from the source node 20 directly*". Appellant notes that since packets are transmitted directly from the source to the target, they are not transiting by any intermediate entity, and in are in particular not "*physically carried by one or more mobile entities that receive and pass on the message by short-range communication*" as recited in claim 1. It naturally follows that the above portion of Toh fails to suggest that "*at least one of the mobile entities is used to carry the message only following an immediately-prior determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver*" as recited in claim 1.

The Examiner also notes that Toh fails to specifically suggest that a mobile entity is used to carry the message following a determination that its direction of travel to progress the message on its way to the target receiver, but opines that Robert teaches such a feature.

Appellant respectfully disagrees with the assertion that Robert teaches such a feature, as explained in detail in the response to the Office Action issued on June 2, 2005, and respectfully disagrees with the assertion that Toh discloses using a node immediately after a prior determination that it is appropriate to carry a message to the destination node, as shown above.

Further, the Appellant will now show that even if one were to accept *arguendo* the above assertions of the Examiner, the combination of the features deemed to be taught by Toh and Robert would not have led to the method recited in claim 1.

As seen above, in Toh a route is established by passing LQ or BQ packets among nodes being in the radio coverage range of each other up to a destination

node that, once the LQ or BQ packets are received, sends a route selection reply to the source node. In other words, in Toh, a route cannot be selected if all the nodes forming the route are not already in the radio coverage range of each other.

If a mobile node on the route is not in the radio coverage range of the next node in the route, even if the direction of travel of the mobile node is such that it is appropriate to physically carry the message in a direction that progresses the message on its way to the destination node, it will not be able to pass the LQ or BQ packets to the next node and it will not allow the route selection process of Toh to be implemented. Further, when the mobile node, due to its motion, will be in the radio coverage range of the next node, it will likely not be any more in the radio coverage range of the previous node, and it will not be in a position to transmit back the reply signal sent from the destination node to the source node of Toh.

Accordingly, a system combining the features allegedly disclosed by Toh and the features allegedly disclosed by Roberts would operate only if the mobile node appropriate to physically carry the message in a direction that progresses the message on its way to the destination node in the radio coverage range of the previous and next nodes during the entire time necessary to transmit the message from the source to its destination. Appellant notes that such a message transmission time must allow at least:

passing the LQ or BQ packets of Toh;

waiting that the destination node receives enough LQ or BQ packets to select a route;

transmitting the reply message from the destination to the source; and finally

transmitting a data messages from the source to the destination.

Appellant respectfully submits that in order to determine that the mobile node remains in the radio coverage range of the previous and next nodes during all the message transmission time the system would further need to determine at least the speed of the node.

Accordingly the Appellant notes that in a system combining the features allegedly disclosed by Toh and Roberts, a mobile node would be used to carry a message following:

an immediately-prior determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the destination receiver, and at least

an immediately-prior determination that the speed of travel of the node is appropriate to let the node remain in the radio coverage range of the previous and next nodes long enough for:

passing the LQ or BQ packets;

waiting that the destination node receives enough LQ or BQ packets to select a route;

transmitting the reply message from the destination to the source; and finally

transmitting a data message from the source to the destination"

The Appellant notes that such a complex system, wherein evaluating the speed of the node would be essential, fails to disclose or suggest the simpler method recited in claim 1, wherein *"at least one of the mobile entities is used to carry the message only following an immediately-prior determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*.

The Appellant respectfully submits that, as shown above:

neither Toh nor Robert teach or suggest using a node to carry a message *"only following an immediately-prior determination"* that it is appropriate to carry the message to the target receiver, as recited in claim 1;

neither Toh nor Robert teach or suggest using mobile entities to carry the message following a *"determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*, as recited in claim 1; and

even if Toh and Robert were teaching such features, the combination of

the methods of Toh and Robert would not read on a method as recited in claim 1, wherein *"at least one of the mobile entities is used to carry the message only following an immediately-prior determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*.

Accordingly, the Appellant submits that claim 1 is patentable over Toh in view of Robert, and respectfully requests that the Examiner's rejection be overturned on appeal.

Rejection of claims 2-5, 7, and 9-16

Claims 2-5, 7 and 9-16 depend directly or indirectly on claim 1. "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, at least in light of their dependency on claim 1, the Appellant submits that claims 2-5, 7 and 9-16 are also allowable.

Rejection of claim 17

Office Action issued on October 19, 2004

In section 2 of the Office Action of October 19, 2004, the Examiner rejected claim 17 "for the same reasons as discussed with claim 1".

In response, the Appellant clarified claim 17 and submitted that the arguments developed for showing the patentability of claim 1 can also be used to show that neither Toh nor Robert disclose a method wherein a mobile entity is *"being used to carry the message only upon the entity being determined to be currently travelling in a direction appropriate to physically carry the message in a direction that progresses the message towards the target"* as recited in claim 17. Appellant accordingly submitted that claim 17 is patentable over Toh in view of Robert.

Office Action issued on June 2, 2005

In section 2 of the Office Action of June 2, 2005, the Examiner rejected claim 17 "for the same reasons as discussed with claim 1". In reply, the Appellant submitted that the arguments developed for showing the patentability of claim 1 in the response can also be used to show that since both Toh and Robert address determining a node-route prior to beginning a transmission, without determining if the direction of travel of the node is appropriate to physically carry the message toward the target, neither Toh nor Robert can be deemed to suggest a method as recited in claim 17, and in particular wherein a mobile entity is *"being used to carry the message only upon the entity being determined to be currently travelling in a direction appropriate to physically carry the message in a direction that progresses the message towards the target"* as recited in claim 17. The Appellant therefore submitted that claim 17 is patentable over Toh in view of Robert.

Office Action issued on November 16, 2005

In section 3 of the Office Action issued on November 16, 2005, the Examiner rejects claim 17 "for the same reasons as discussed with claim 1".

The Appellant respectfully submits that the arguments developed in the present Brief as to claim 1 can be used to show that:

neither Toh nor Robert teaches or suggests using a node to carry a message *"only upon the entity being determined to be currently travelling in a direction appropriate to physically carry the message in a direction that progresses the message towards the target"*, as recited in claim 17; and

even if Toh and Robert were teaching such features, the combination of the methods of Toh and Robert would not read on a method as recited in claim 17, wherein at least one of the mobile entities is *"used to carry the message only upon the entity being determined to be currently travelling in a direction appropriate to physically carry the message in a direction that progresses the message towards the target"*.

Accordingly, the Appellant submits that claim 17 is patentable over Toh in view of Robert, and respectfully requests that the Examiner's rejection be overturned on appeal.

Issue 2: Whether claims 18 and 20-21 are patentable under 35 U.S.C. 103(a) over Toh in view of Robert and further in view of Stiller.

Rejection of claim 18

Office Action issued on October 19, 2004

In section 3 of the Office Action of October 19, 2004, the Examiner rejected claim 18 "for the same reason as discussed in claim 1", under the rationale that Stiller discloses a short-range transceiver capable of determining the presence nearby of the mobile entity

In response, Appellant clarified claim 18, and noted that the Examiner had failed to show that Stiller discloses a send control subsystem for enabling the passing of a message to a mobile entity *"only upon determining that the current direction of travel of the mobile entity, as indicated by direction data received from the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"* as recited in claim 18.

Further, the Appellant submitted that the arguments used as to claim 1 can also be used to show that neither Toh nor Robert disclose a send control subsystem for enabling the passing of a message to a mobile entity "only upon determining that the current direction of travel of the mobile entity, as indicated by direction data received from the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver" as recited in claim 18.

The Applicant therefore submitted that claim 18 is patentable over Toh in view Robert and further in view Stiller.

Office Action issued on June 2, 2005

In section 3 of the Office Action of June 2, 2005, the Examiner rejected claim 18 "for the same reason as discussed in claim 1", under the rationale that Stiller discloses a short-range transceiver capable of determining the presence nearby of the mobile entity.

In response, the Applicant submitted that the Examiner had failed to show that Stiller discloses a send control subsystem for enabling the passing of a message to a mobile entity *"only upon determining that the current direction of travel of the mobile entity, as indicated by direction data received from the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"* as recited in claim 18.

The Applicant further submitted that the arguments used to show the patentability of claim 1 can also be used to show that, since Toh and Robert address a system wherein the node route is chosen in the target node or in the source node, neither Toh nor Robert disclose an intermediate entity apparatus comprising a send control subsystem for enabling the passing of a message to a mobile entity *"only upon determining that the current direction of travel of the mobile entity, as indicated by direction data received from the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"* as recited in claim 18.

Accordingly, the Applicant submitted that no combination of Toh, Robert and Stiller would have led one of ordinary skill to an apparatus as in claim 18, and that claim 18 is patentable over Toh in view of Robert and further in view of Stiller.

Office Action issued on November 16, 2005

In section 4 of the Office Action issued on November 16, 2005, the Examiner rejects claim 18 "for the same reasons as discussed with claim 1".

The Appellant respectfully submits that the arguments developed in the present Brief in relation with claim 1 can be used to show that:

neither Toh nor Robert teach or suggest an apparatus as recited in claim 18, and in particular comprising *"a send control subsystem for enabling the passing of the message, via the short-range transceiver, to said mobile entity only upon determining that the current direction of travel of the mobile entity, as indicated by direction data received from the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*; and

even if Toh and Robert were teaching such features, the combination of the methods of Toh and Robert would not read on an apparatus as recited in claim 18, and in particular comprising *"a send control subsystem for enabling the passing of the message, via the short-range transceiver, to said mobile entity only upon determining that the current direction of travel of the mobile entity, as indicated by direction data received from the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"*.

Because the Examiner has failed to show that Stiller discloses or suggests the above features, the Appellant submits that no combination of Toh, Robert and Stiller would have led one skilled in the art to an apparatus as recited in claim 18, whereby claim 18 is patentable over Toh in view of Robert and further in view of Stiller. Appellant respectfully requests that the Examiner's rejection be overturned on appeal.

Rejection of claim 19

Claim 19 depends on claim 18. "If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious." *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, at least in light of the above discussion, the Appellant submits that claim 19 is also allowable.

Rejection of claim 20

Office Action issued on October 19, 2004

In section 3 of the Office Action of October 19, 2004, the Examiner rejected claim 20 "for the same reason as discussed in claim 1", under the rationale that Stiller discloses a short-range transceiver capable of determining the presence nearby of the mobile entity.

In response, Appellant clarified claim 20, and noted that the Examiner opined that Stiller teaches "a short range transceiver capable of determining the presence nearby of the mobile entity, a memory for holding the message", but failed to show that Stiller disclose *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the direction of travel of the mobile entity is appropriate to progress the message on its way to the target receiver as indicated by direction data received from the apparatus via the short-range subsystem"* as recited in claim 20.

Further, the Appellant submitted that the arguments used as to claim 1 can also be used to show that neither Toh nor Robert disclose *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the direction of travel of the mobile entity is appropriate to progress the message on its way to the target receiver as indicated by direction data received from the apparatus via the short-range subsystem"* as recited in claim 20.

The Applicant therefore submitted that claim 20 is patentable over Toh in view Robert and further in view of Stiller.

Office Action issued on June 2, 2005

In section 3 of the Office Action of June 2, 2005, the Examiner rejected claim 20 "for the same reason as discussed in claim 1", under the rationale that Stiller discloses a short-range transceiver capable of determining the presence nearby of the mobile entity.

In response, the Applicant submitted that the Examiner had failed to show that Stiller discloses *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the direction of travel of the mobile entity is*

appropriate to progress the message on its way to the target receiver as indicated by direction data received from the apparatus via the short-range subsystem" as recited in claim 20.

The Applicant further submitted that the arguments used to show the patentability of claim 1 can also be used to show that, since Toh and Robert address a system wherein the node route is chosen in the target node or in the source node, neither Toh nor Robert disclose *"a mobile entity [...] comprising* [...] *a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the direction of travel of the mobile entity is appropriate to progress the message on its way to the target receiver as indicated by direction data received from the apparatus via the short-range subsystem"* as recited in claim 20.

Accordingly, the Applicant submitted that no combination of Toh, Robert and Stiller would have led one of ordinary skill to a mobile entity as in claim 20, and that claim 20 is patentable over Toh in view of Robert and further in view of Stiller.

Office Action issued on November 16, 2005

In section 4 of the Office Action issued on November 16, 2005, the Examiner rejects claim 20 "for the same reasons as discussed with claim 1".

The Appellant respectfully submits that the arguments developed in the present Brief in relation with claim 1 can be used to show that:

neither Toh nor Robert teach or suggest a mobile entity as recited in claim 20, and in particular comprising *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the direction of travel of the mobile entity, is appropriate to progress the message on its way to the target receiver as indicated by direction data received from the apparatus via the short-range subsystem"*; and

even if Toh and Robert were teaching such features, the combination of the methods of Toh and Robert would not read on a mobile entity having decisional means as recited in claim 20, and in particular comprising *"a receive control subsystem for enabling the storage for carriage of said message, only upon*

determining that the direction of travel of the mobile entity, is appropriate to progress the message on its way to the target receiver as indicated by direction data received from the apparatus via the short-range subsystem".

Because the Examiner has failed to show that Stiller discloses or suggests the above features, the Appellant submits that no combination of Toh, Robert and Stiller would have led one skilled in the art to a mobile entity as recited in claim 20, whereby claim 20 is patentable over Toh in view of Robert and further in view of Stiller. Appellant respectfully requests that the Examiner's rejection be overturned on appeal.

Rejection of claim 21

Office Action issued on October 19, 2004

In section 3 of the Office Action of October 19, 2004, the Examiner rejected claim 21 "for the same reason as discussed in claim 1", under the rationale that Stiller discloses a short-range transceiver capable of determining the presence nearby of the mobile entity.

In response, Appellant clarified claim 21, and noted that the Examiner opined that Stiller teaches "a short range transceiver capable of determining the presence nearby of the mobile entity, a memory for holding the message", but failed to show that Stiller disclose *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the current direction of travel of the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"* as recited in claim 21.

Further, the Appellant submitted that the arguments used as to claim 1 can also be used to show that neither Toh nor Robert disclose *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the current direction of travel of the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"* as recited in claim 21.

The Applicant therefore submitted that claim 21 is patentable over Toh in view Robert and further in view Stiller.

Office Action issued on June 2, 2005

In section 3 of the Office Action of June 2, 2005, the Examiner rejected claim 21 "for the same reason as discussed in claim 1", under the rationale that Stiller discloses a short-range transceiver capable of determining the presence nearby of the mobile entity.

In response, the Applicant submitted that the Examiner had failed to show that Stiller discloses a mobile entity comprising *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the current direction of travel of the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"* as recited in claim 21.

The Applicant further submitted that the arguments used to show the patentability of claim 1 can also be used to show that, since Toh and Robert address a system wherein the node route is chosen in the target node or in the source node, neither Toh nor Robert disclose a mobile entity comprising *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the current direction of travel of the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver"* as recited in claim 21.

Accordingly, the Applicant submitted that no combination of Toh, Robert and Stiller would have led one of ordinary skill to a mobile entity as in claim 21, and that claim 21 is patentable over Toh in view of Robert and further in view of Stiller.

Office Action issued on November 16, 2005

In section 4 of the Office Action issued on November 16, 2005, the Examiner rejects claim 21 "for the same reasons as discussed with claim 1".

The Appellant respectfully submits that the arguments developed in the present Brief in relation with claim 1 can be used to show that:

neither Toh nor Robert teach or suggest a mobile entity having decisional means as recited in claim 21, and in particular comprising *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the current direction of travel of the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver as indicated by a reference direction determined by the mobile entities current location and a location passed to it from the apparatus via the short-range subsystem"*; and

even if Toh and Robert were teaching such features, the combination of the methods of Toh and Robert would not read on a mobile entity as recited in claim 21, and in particular comprising *"a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the current direction of travel of the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver as indicated by a reference direction determined by the mobile entities current location and a location passed to it from the apparatus via the short-range subsystem"*.

Because the Examiner has failed to show that Stiller discloses or suggests the above features, the Appellant submits that no combination of Toh, Robert and Stiller would have led one skilled in the art to a mobile entity as recited in claim 21, whereby claim 21 is patentable over Toh in view of Robert and further in view of Stiller. Appellant respectfully requests that the Examiner's rejection be overturned on appeal.

CONCLUSION

For the extensive reasons advanced above, Appellant respectfully contends that each claim is patentable. Therefore, reversal of the above-

addressed rejections and objections and re-opening of the prosecution is respectfully solicited.

The Commissioner is authorized to charge any additional fees that may be required or credit overpayment to deposit account no. 08-2025. In particular, if this response is not timely filed, the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136(a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account no. 08-2025.

I hereby certify that this correspondence is being deposited with the United States Post Office with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

February 15, 2006
(Date of Transmission)

Shannon Tinsley
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Attachments

Listing of Claims:

1. (previously presented) A method of passing a message to a target receiver at a known location, wherein the message is physically carried towards the target receiver by one or more mobile entities that receive and pass on the message by short-range communication, the message including an indication of the location of the target receiver, and at least one of the mobile entities is used to carry the message only following an immediately-prior determination that its direction of travel is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver.

2. (original) A method according to claim 1, wherein a said at least one mobile entity is determined to be travelling in an appropriate direction upon this direction approximating to the direction towards the target receiver.

3. (original) A method according to claim 1, wherein a said at least one mobile entity is determined to be travelling in an appropriate direction upon this direction taking it along a map route in a direction reducing the route distance to the target receiver.

4. (original) A method according to claim 1, wherein a said at least one mobile entity is determined to be travelling in an appropriate direction upon this direction approximating to the direction towards an intermediate location predetermined as being one where the message is at least likely to encounter another mobile entity, or other means, for progressing the message towards the target receiver

5. (original) A method according to claim 1, wherein said determination is effected by an entity already holding the message.

6. (original) A method according to claim 5, wherein the message-holding entity effects said determination by the steps of:

-receiving, from the nearby said at least one of the mobile entities, the latter's direction of travel;

-deriving, as a reference direction, the direction from its own location to that of the target receiver or of an intermediate location predetermined as being one where the message is at least likely to encounter another mobile entity, or other means, for progressing the message towards the target receiver; and

-comparing the said direction of travel of the nearby mobile entity with the reference direction and determining that the nearby mobile entity is appropriate to carry to the message only upon the compared directions being within a predetermined angular range of each other.

7. (original) A method according to claim 1, wherein said determination is effected by the concerned said at least one of the mobile entities.

8. (original) A method according to claim 7, wherein the concerned said at least one of the mobile entities effects said determination by the steps of:

-receiving a reference direction from the entity already holding the message, this reference direction being the direction from the location of the message-holding entity to that of the target receiver or of an intermediate location predetermined as being one where the message is at least likely to encounter another mobile entity, or other means, for progressing the message towards the target receiver; and

-comparing the said direction of travel of said at least one of the mobile entities with the reference direction and determining that it is appropriate to carry to the message only upon the compared directions being within a predetermined angular range of each other.

9. (original) A method according to claim 7, wherein the concerned said at

least one of the mobile entities effects said determination by the steps of:

-receiving, from the entity already holding the message, the location of the target receiver or of an intermediate location predetermined as being one where the message is at least likely to encounter another mobile entity, or other means, for progressing the message towards the target receiver;

-deriving, as a reference direction, the direction from its current location to the received location; and

-comparing its direction of travel with the reference direction and determining that it is appropriate to carry to the message only upon the compared directions being within a predetermined angular range of each other.

10. (original) A method according to claim 1, wherein a said at least one mobile entity, when carrying the message, seeks to pass on the message to another mobile entity upon its direction of travel no longer being appropriate to progress the message on its way to the target receiver.

11. (original) A method according to claim 1, wherein a said at least one mobile entity, when carrying the message, opportunistically passes the message to another mobile entity that is travelling in a direction more closely aligned to one appropriate to progress the message on its way to the target receiver.

12. (original) A method according to claim 1, wherein a said at least one mobile entity, when carrying the message, opportunistically passes the message to another mobile entity that is travelling, at a substantially greater speed than the current message-carrying entity, in a direction appropriate to progress the message on its way to the target receiver.

13. (original) A method according to claim 1, wherein a said at least one mobile entity, when passing on the message, seeks to pass the message to multiple other mobile entities travelling in respective directions appropriate to

progress the message on its way to the target.

14. (original) A method according to claim 1, wherein a said at least one mobile entity, when passing on the message, is informed by the message-receiving mobile entity as to whether the latter has accepted to carry the message.

15. (original) A method according to claim 1, wherein the message is routed through a communications infrastructure to a short-range transmitter close or closest to the target receiver and the latter then passes the message to a said at least one mobile entity.

16. (original) A method according to claim 15, wherein the message is passed from an originating entity to the communications infrastructure via one or more mobile entities that are used to carry the message regardless of their direction of travel.

17. (previously presented) A method of passing a message to a target receiver at a known location, wherein the message is physically carried towards the target receiver by one or more mobile entities that receive and pass on the message by short-range communication, the message including an indication of the location of the target receiver, and at least one of the mobile entities knowing at least its approximate location and direction of travel and being used to carry the message only upon the entity being determined to be currently travelling in a direction appropriate to physically carry the message in a direction that progresses the message towards the target.

18. (previously presented) Apparatus for passing a message to a mobile entity travelling in a direction appropriate to progress the message on its way to a target receiver the location of which is indicated in the message, the apparatus

comprising:

-a short-range transceiver capable of determining the presence nearby of said mobile entity and of exchanging data with it;

-a location discovery arrangement by which the apparatus can know its location;

-a memory for holding the message; and

-a send control subsystem for enabling the passing of the message, via the short-range transceiver, to said mobile entity only upon determining that the current direction of travel of the mobile entity, as indicated by direction data received from the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver.

19. (original) Apparatus according to claim 18, wherein the send control subsystem comprises:

-a direction-derivation arrangement for deriving, as a reference direction, the direction from its own location as indicated by said location discovery means, to that of the target receiver or of an intermediate location predetermined as being one where the message is at least likely to encounter another mobile entity, or other means, for progressing the message towards the target receiver; and

-a comparison arrangement for comparing the direction of travel of the nearby mobile entity with the reference direction and determining that the nearby mobile entity is appropriate to carry to the message only upon the compared directions being within a predetermined angular range of each other.

20. (original) A mobile entity for receiving a message, and storing it for carriage, when travelling in a direction appropriate to progress the message on its way to a target receiver the location of which is indicated in the message, the apparatus comprising:

-a short-range transceiver capable of determining the presence nearby of apparatus holding the message, and of exchanging data with the apparatus;

-a direction-of-travel discovery arrangement by which the mobile entity can determine at least its general direction of travel;

-a memory for storing the message; and

-a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the direction of travel of the mobile entity, is appropriate to progress the message on its way to the target receiver as indicated by direction data received from the apparatus via the short-range subsystem.

21. (previously presented) A mobile entity for receiving a message, and storing it for carriage, when travelling in a direction appropriate to progress the message on its way to a target receiver the location of which is indicated in the message, the apparatus comprising:

-a short-range transceiver capable of determining the presence nearby of apparatus holding the message, and of exchanging data with the apparatus;

-a location and direction-of-travel discovery arrangement by which the mobile entity can determine at least its general location and direction of travel;

-a memory for storing the message; and

-a receive control subsystem for enabling the storage for carriage of said message, only upon determining that the current direction of travel of the mobile entity, is appropriate to physically carry the message in a direction that progresses the message on its way to the target receiver as indicated by a reference direction determined by the mobile entities current location and a location passed to it from the apparatus via the short-range subsystem.

Evidence Appendix Page B-1

There is no evidence submitted with the present Appeal Brief.

There are no other appeals or interferences related to the present application.